



MASSACHUSETTS
HEALTH POLICY COMMISSION

Health Policy Commission Investments in NAS

Updated: March 13, 2017



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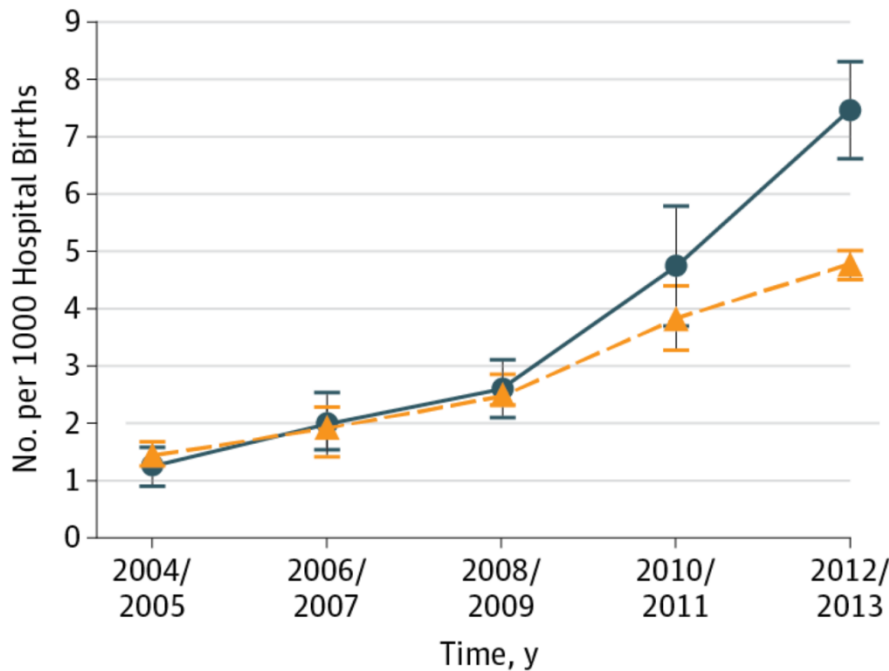
AGENDA

- NAS volume
- HPC investments in NAS
- NAS awardee details

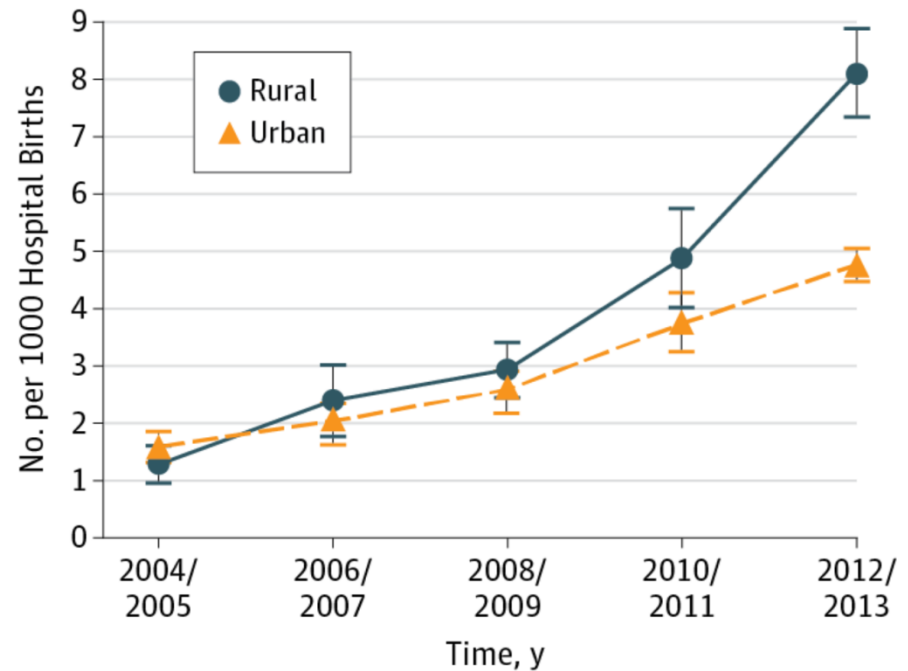
Nationally, the rate of NAS is increasing most quickly in rural areas

Rural and Urban Differences in Neonatal Abstinence Syndrome and Maternal Opioid Use, 2004 to 2013

A Neonatal abstinence syndrome

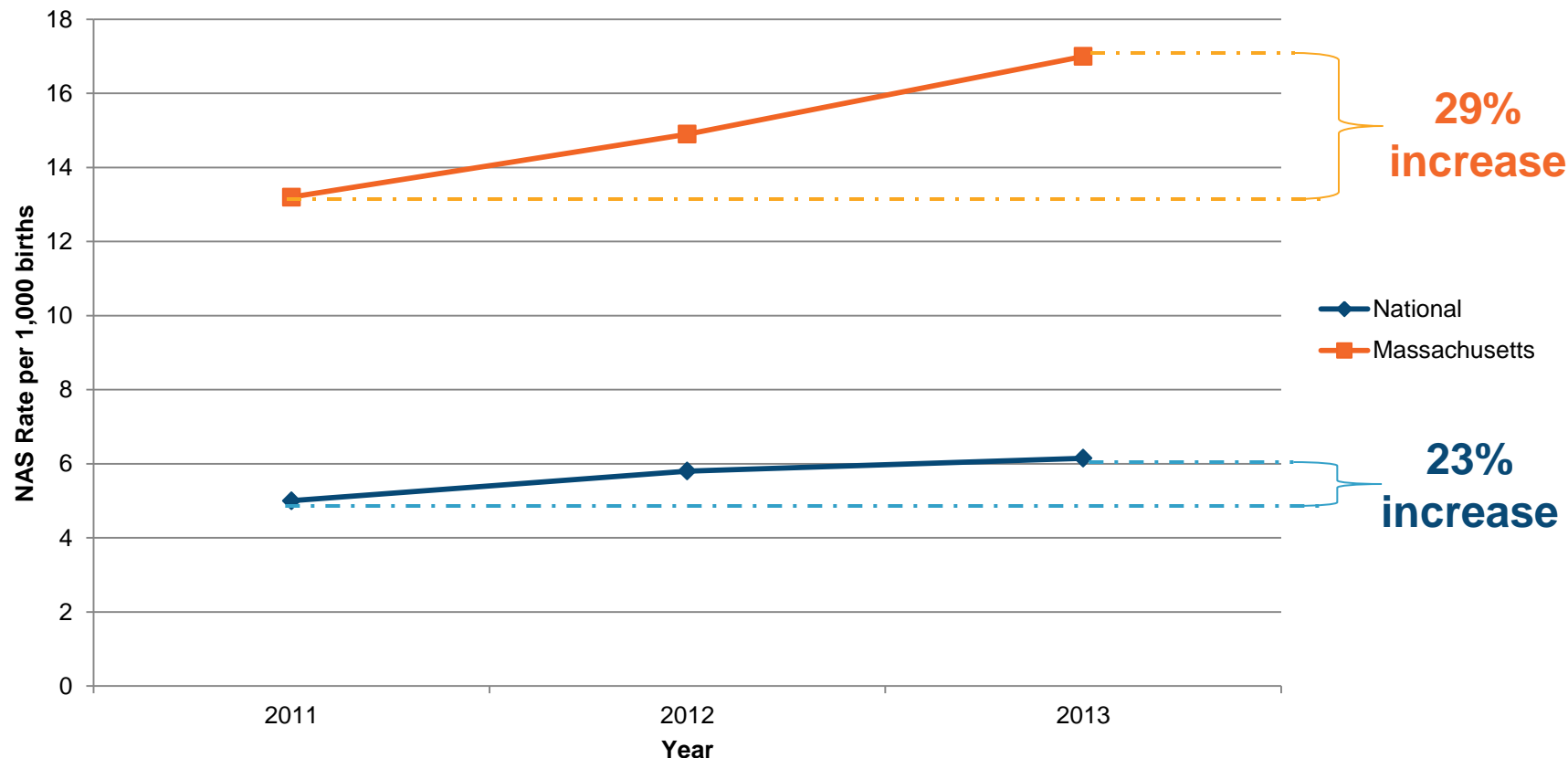


B Maternal opioid use



NAS is increasing more rapidly in Massachusetts than nationally

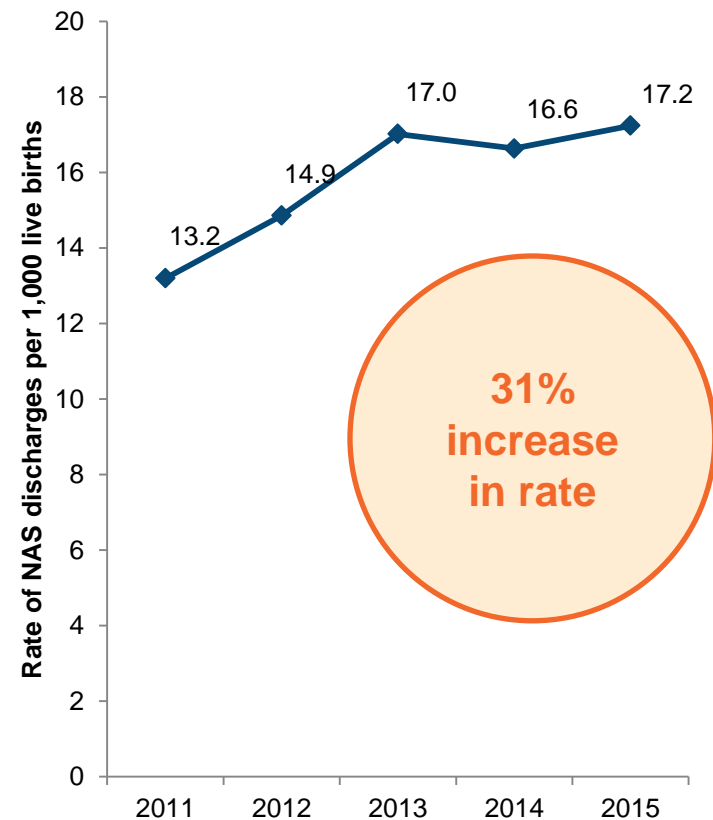
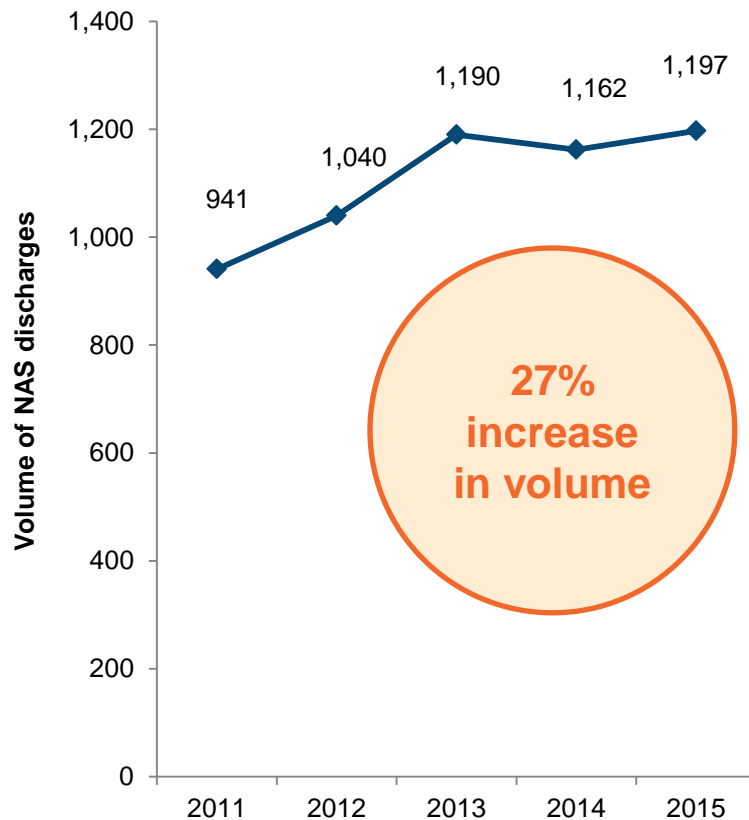
National vs. Massachusetts trends in NAS births (2011-2013)



Notes: Generated using HPC analysis of Center for Health Information and Analysis, Inpatient Discharge Database 2011-2015 and Ko JY, Patrick SW, Tong VT, Patel R, Lind JN, Barfield WD. Incidence of Neonatal Abstinence Syndrome — 28 States, 1999–2013. MMWR Morb Mortal Wkly Rep 2016;65:799–802. DOI: <http://dx.doi.org/10.15585/mmwr.mm6531a2>

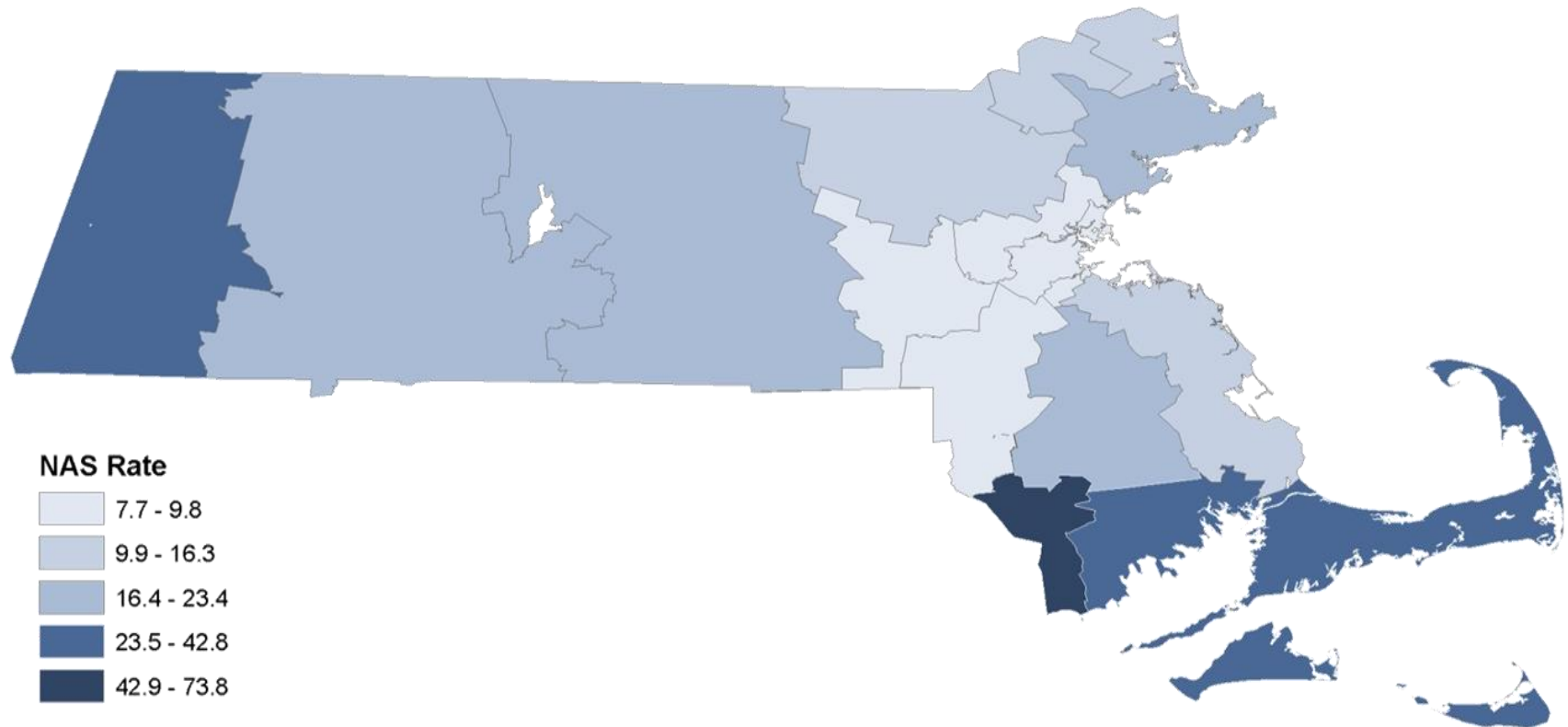
NAS discharges were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in a newborn).

NAS increased significantly in Massachusetts between 2011 and 2015

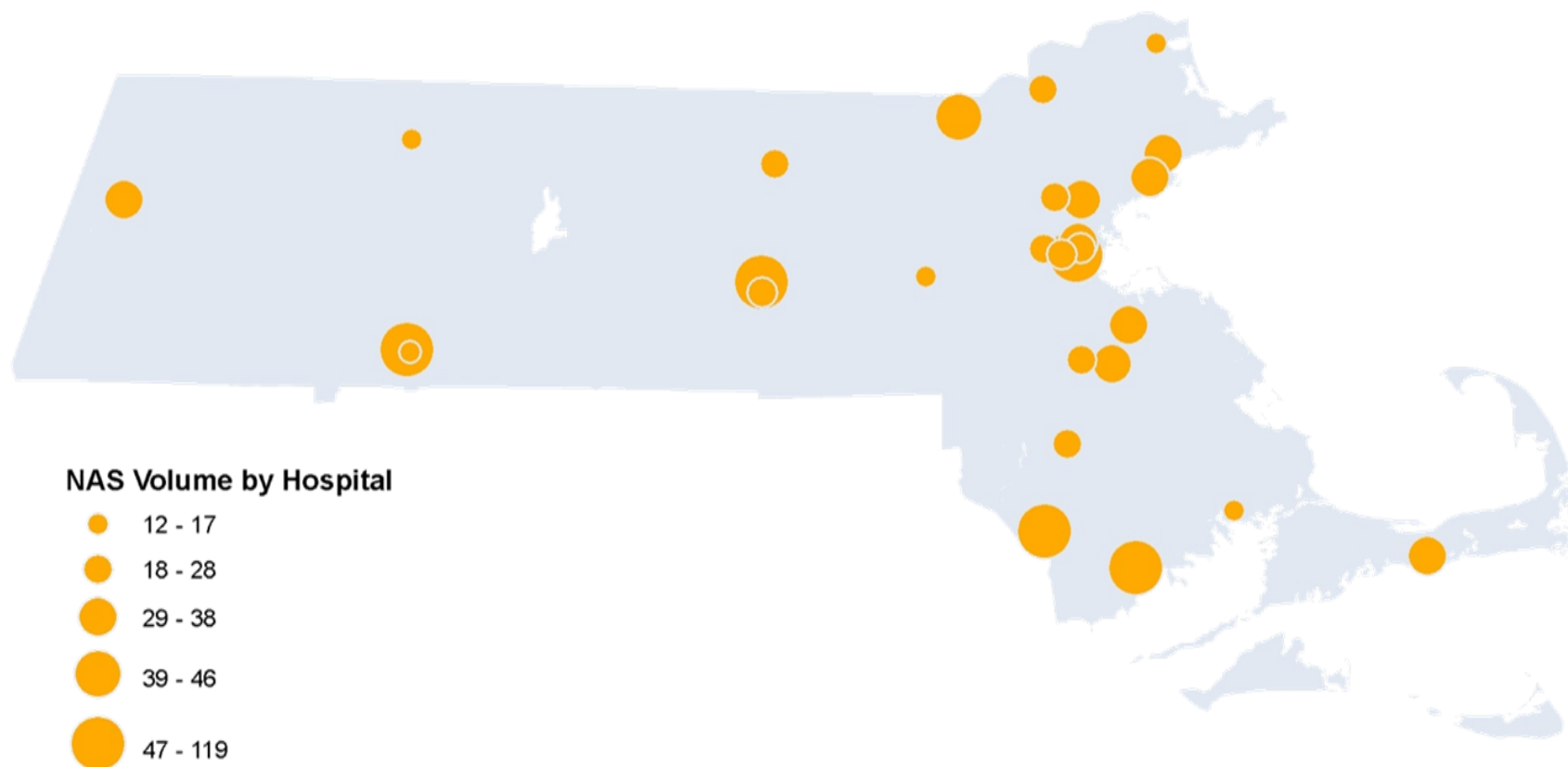


Source: HPC analysis of Center for Health Information and Analysis, Inpatient Discharge Database 2011-2015
Notes: NAS discharges were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in a newborn).

Rate of NAS discharges per 1,000 live births, by HPC region, in 2015



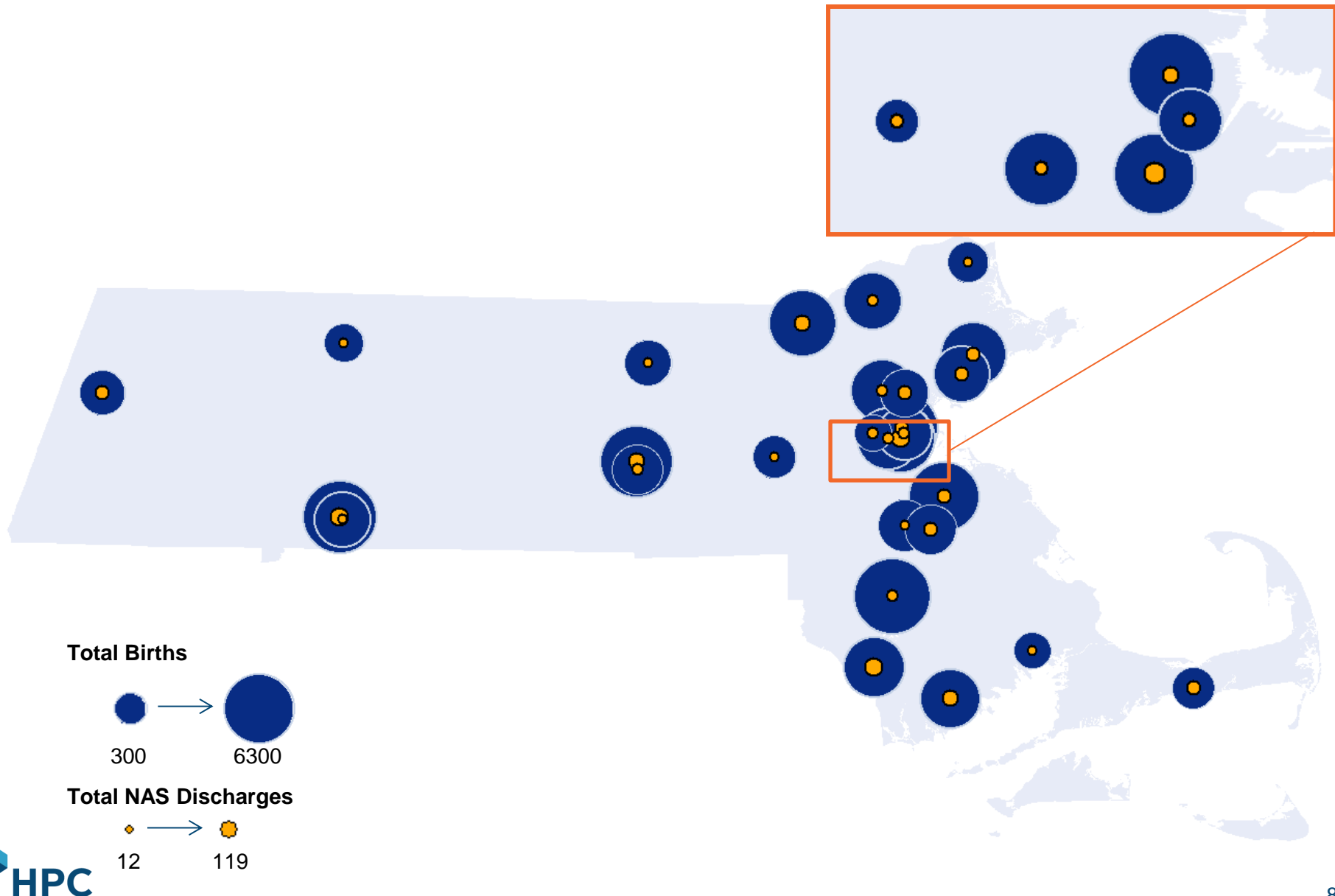
2015 NAS discharges by hospital volume



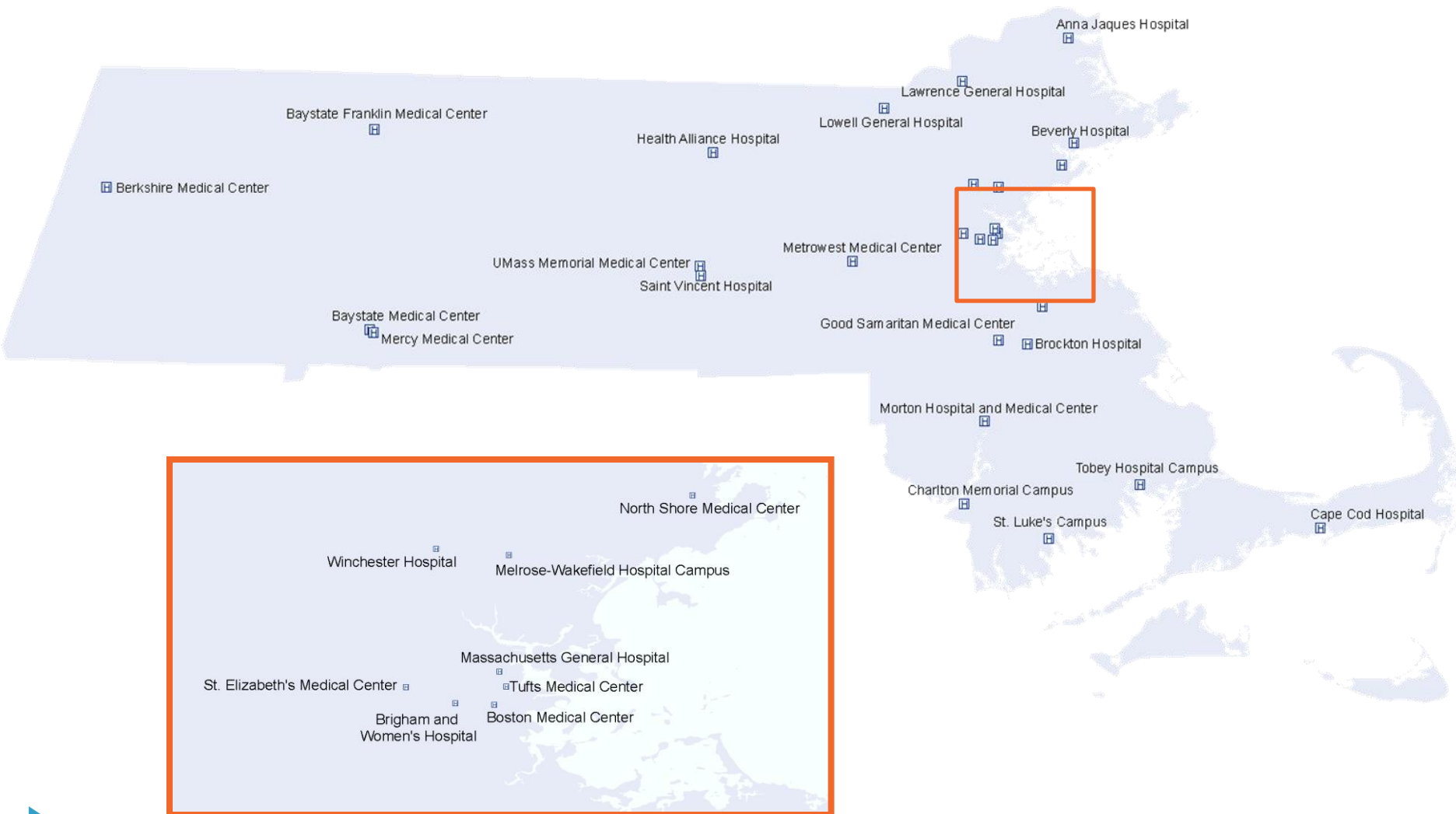
Source: HPC analysis of Center for Health Information and Analysis, Inpatient Discharge Database 2015

Notes: NAS discharges were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in a newborn). Only includes hospitals with 12 or more NAS discharges.

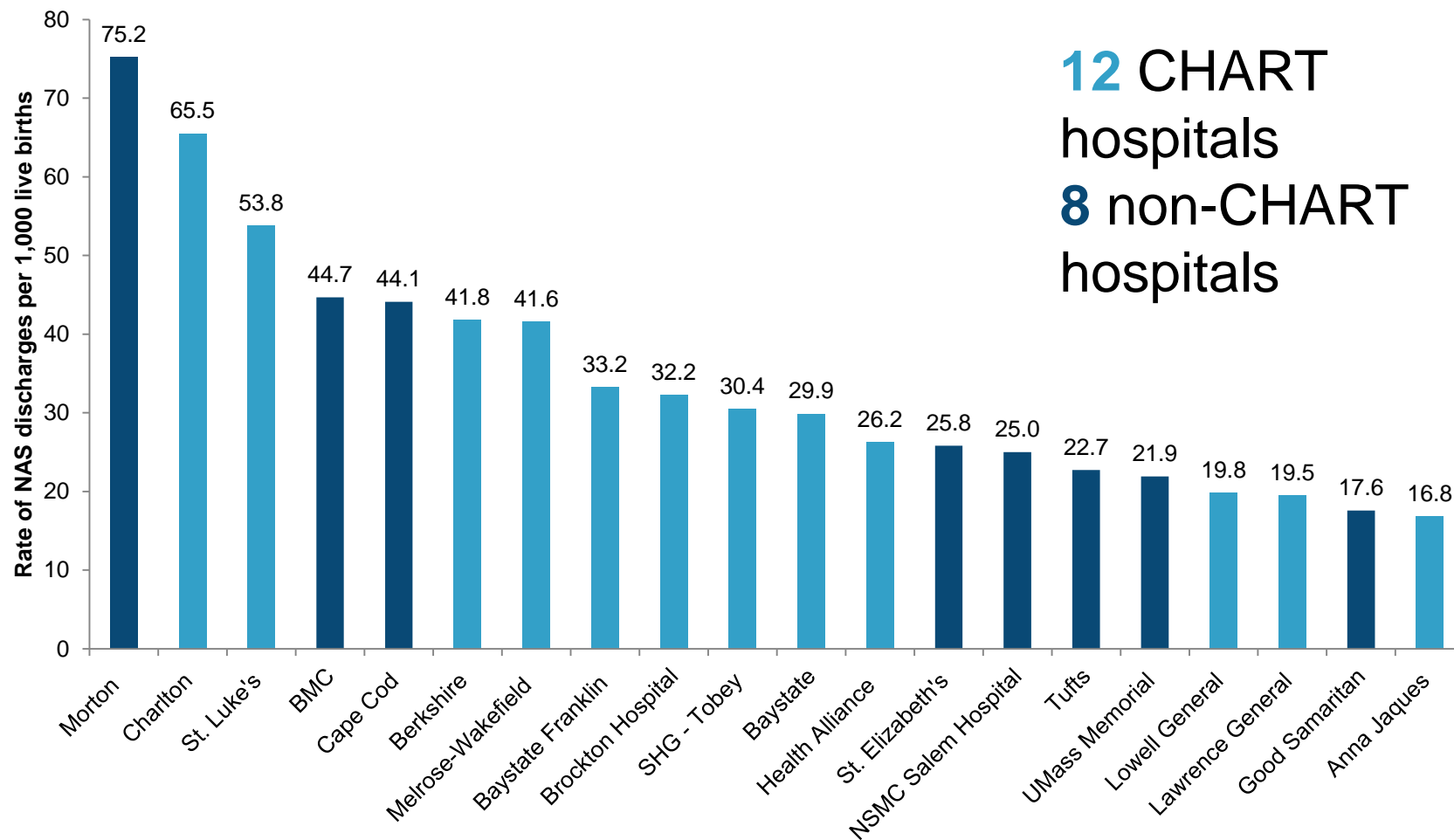
2015 NAS discharges by hospital volume, relative to total obstetric volume



Hospital names (associated with preceding NAS volume maps)



MA hospitals with highest rate of NAS in 2015



Source: HPC analysis of Center for Health Information and Analysis, Inpatient Discharge Database 2015

Notes: NAS discharges were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in a newborn). Only includes hospitals with 12 or more NAS discharges.



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Overview of HPC's Mother and Infant-Focused NAS Interventions

6 initiatives

Funded by the HPC

\$3,000,000

HPC funding

59 Organizations

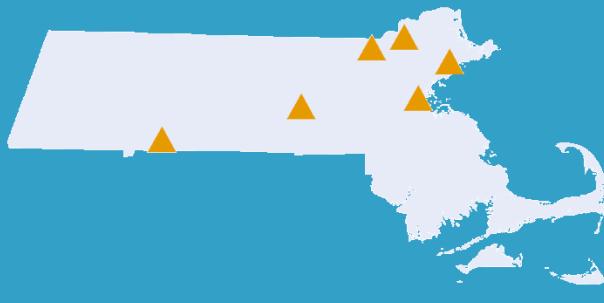
(e.g. hospitals,
primary care
practices, behavioral
health providers)
collaborating

**>450 infants with
NAS**

Collectively treated by HPC's
proposed awardees in 2015

**Initiatives span the
Commonwealth:**

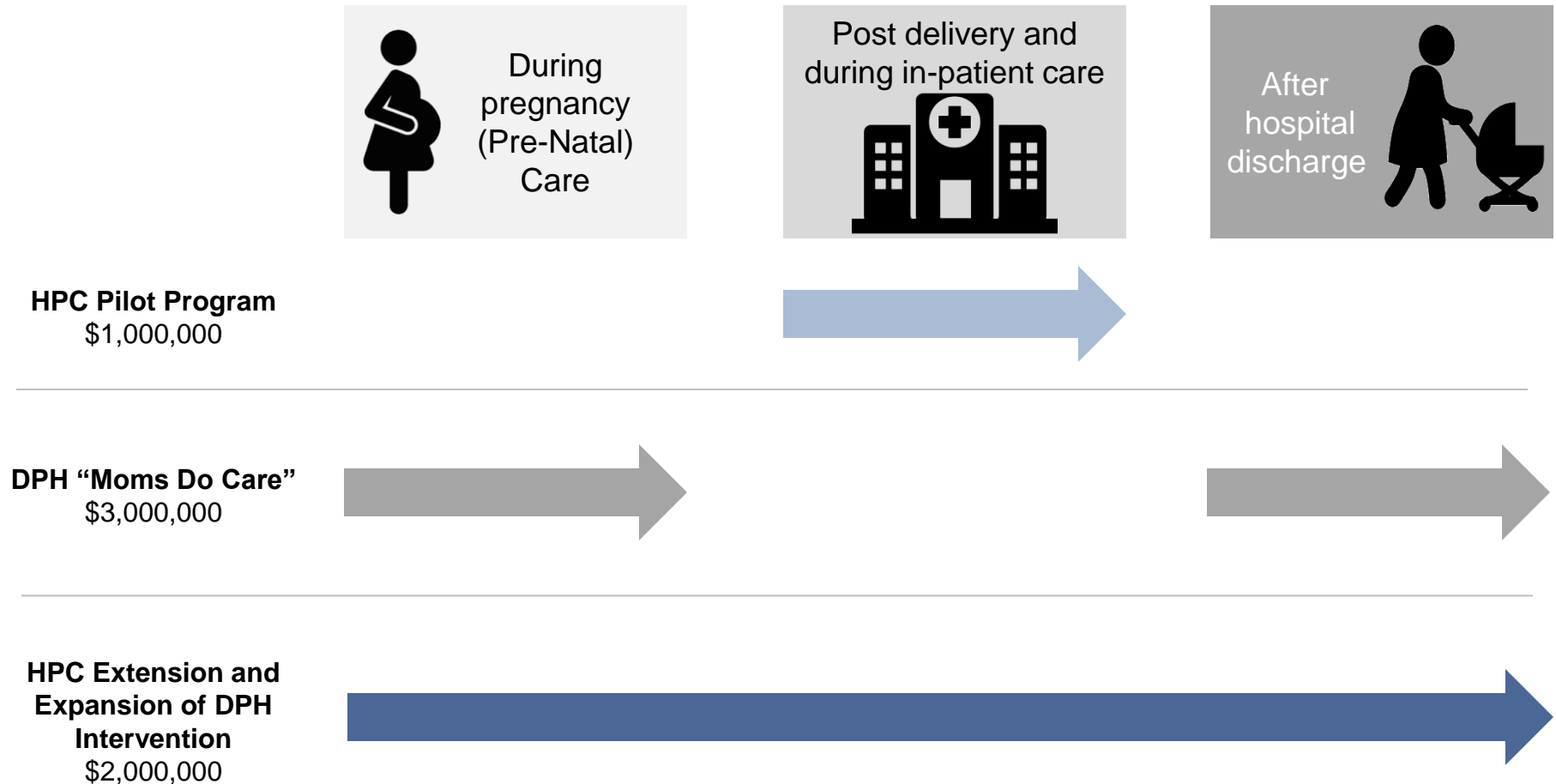
From Springfield to Middlesex
County



>\$5,000,000

combined investment
with 30% of initiative
costs being contributed
by the applicants

Aligning with and expanding on DPH's initiative allows for interventions to be applied across broader spectrum of continuum



Stage of Intervention for Massachusetts Funding Sources to Address Neonatal Abstinence Syndrome



HPC Pilot Program

Funds: \$1,000,000

Source: State appropriation & HPC's Distressed Hospital Trust Fund

Awardees: Baystate Medical Center, UMass Memorial, Boston Medical Center, Lawrence General

Proposed HPC Funding through CHART Investment Program to expand on DPH work \$2,000,000

Stage of Intervention for Massachusetts Funding Sources to Address Neonatal Abstinence Syndrome



HPC Pilot Program
Funded through FY16
State Budget
\$1,000,000

DPH “Moms Do Care” Program

Funds: \$3,000,000
Source: Federal SAMHSA Grant
Awardees: Cape Cod and UMass Memorial Health Systems

Stage of Intervention for Massachusetts Funding Sources to Address Neonatal Abstinence Syndrome



HPC Pilot Program
Funded through FY16
State Budget
\$1,000,000

Funds: \$2,000,000
Source: HPC's Distressed Hospital Trust Fund
Awardees: Beverly Hospital, Lowell General Hospital

**HPC
Expansion &
Extension of DPH
Intervention**

HPC's NAS grantee activity

HPC is investing in both inpatient quality improvement initiatives to address treatment of infants with NAS, and outpatient efforts to increase adherence to pharmacologic treatment among pregnant and post-partum women with opioid use disorder (OUD). HPC's 6 hospital grantees have begun work to achieve the following aims.

Inpatient activity:

- Facilitate “rooming-in” for eligible women & infants
- Increase breastfeeding rates
- Facilitate early initiation of skin-to-skin contact after birth
- Provide bedside psychotherapy to women after birth
- Increase # of infants discharged to biological family
- Make EI referral prior to discharge
- Treat infants in need of pharmacologic intervention with methadone instead of morphine

Outpatient activity:

- Screen pregnant women for OUD at first prenatal appointment
- Increase engagement in and adherence to pharmacologic treatment during pregnancy among women with OUD
- Provide same-day co-located BH and prenatal care
- Provide social supports to facilitate access to treatment (e.g., childcare, transportation)
- Improve post-discharge follow up with EI, pediatrics, and addiction treatment provider

HPC's NAS hospital grantees & extension of DPH's MDC initiative

2 HPC grantees are implementing both the inpatient quality improvement intervention, and interventions that target pregnant and post-partum women with OUD to increase engagement in, and adherence to, pharmacologic treatment. This replicates a SAMHSA grant currently operated by DPH at UMass Memorial and Cape Cod Health Systems, called *Moms Do Care*.

Grantee	Award	Total initiative cost	Expanding DPH's MDC initiative?	2015 NAS volume	Primary Aim
Baystate Medical Center	\$249,778	\$400,481	No	119	Increase rate of rooming-in by 30%
Boston Medical Center	\$248,976	\$357,053	No	110	Reduce LOS by 40%
UMass Memorial Medical Center	\$249,992	\$354,794	No	81	Reduce LOS by 30%
Lawrence General Hospital	\$250,000	\$677,719	No	28	Reduce the cost of NAS episode by 10%
Beverly Hospital	\$1,000,000	\$1,266,962	Yes	35	Increase retention in treatment by 20%
Lowell General Hospital	\$999,032	\$1,451,364	Yes	46	Increase utilization of pharmacologic treatment by 20%

Technical assistance and evaluation of investments in pregnancy and postpartum interventions (supported through an ISA with DPH)

TECHNICAL ASSISTANCE (EXAMPLES)

- Training providers and support staff on trauma-informed care and stigmatizing attitudes and speech
- Training for PCPs, family practice, and OB/GYNs on buprenorphine prescribing to increase number of providers waived to prescribe
- Training OB/GYNs and affiliated support staff on best practices around treatment of pregnant women with OUD
- Development of web-based toolkit for OB/GYNs addressing OUD
- Training peer moms as recovery coaches (e.g., ethics, compassion fatigue, privacy)
- Parenting and nurturing classes for women with OUD
- Providing care management support for providers

EVALUATION (EXAMPLES)

Individual level:

- Rates of illicit drug use
- Rates of program retention
- Changes in functional status level
- Changes in housing stability
- Rates of PTSD symptoms

System level:

- Number of waived providers
- Rates of identifying and engaging pregnant women with OUD
- Expressed stigmatizing beliefs and attitudes among providers
- Level of behavioral health integration

Technical assistance and evaluation of investments in inpatient NAS quality improvement initiatives

TECHNICAL ASSISTANCE (EXAMPLES)

- Training nurses on scoring severity of NAS symptoms
- Training providers on emerging best practices in clinical protocols, including targeted training on hospital-specific quality improvement initiative goals
- Quality improvement implementation support (e.g., rapid cycle adjustments to account for successes and failures)
- Data reporting support and feedback with hospital “scorecards” and benchmarks
- Annual practice surveys
- Dissemination of learnings from support provided to HPC-funded hospitals to all birthing hospitals in the Commonwealth

EVALUATION (EXAMPLES)

- Rates of breastfeeding (initiation and at time of discharge)
- Rates of early skin to skin contact (between infant and birth mother)
- Rates and type of pharmacologic intervention, and weaning time
- Changes in LOS in various settings of care (NICU, SCN, total hospital stay)
- Reliability of scoring of NAS symptoms
- Known prenatal exposure to opioids (for treatment of OUD or otherwise)
- Rates of referral to early intervention services prior to discharge



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Neonatal Abstinence Syndrome Interventions Awardee Highlight (Inpatient Services): *Boston Medical Center*



Target Population

Infants monitored for NAS

Primary Aim

Reduce length of inpatient stay for infants with NAS by 40%

Secondary Aims

1. Reduce pharmacotherapy by 30%
2. Increase breastfeeding initiation rate by 15%
3. Increase maternal bedside presence by 20%
4. Institute bedside psychotherapy for mothers

Operational Approach

- Increase parental presence at bedside
- Implement peer support to introduce the benefits of breastfeeding and rooming-in
- Optimize NAS pharmacologic treatment with methadone as a first-line therapy instead of morphine
- Improve approaches to NAS symptom scoring
- Ensure timely access to wrap-around outpatient services for woman and infant
- Implement a prenatal care curriculum that includes brief individual obstetric evaluation, group discussion, education, peer support, and relapse prevention

Total Initiative Cost

\$357,053

Total HPC Funding

\$248,976

Neonatal Abstinence Syndrome Interventions Awardee Highlight (Inpatient Services): *Baystate Medical Center*



Target Population

Infants monitored for NAS

Primary Aim

Increase rooming-in care for eligible maternal-infant dyads by 50%

Secondary Aims

1. Increase adherence to MAT by pregnant women with OUD by 30%
2. Increase breastfeeding and skin to skin care rate by 30% for opioid exposed infants
3. Increase the number of infants being discharged home to biological families by 30%

Operational Approach

- Allocate and utilize 4 rooms on the postpartum floor to provide care to eligible mother-infant dyads during observation, as well as treatment phases of NAS
- Nurses caring for infants with NAS are certified in the Finnegan scoring system or FNAST (Finnegan Neonatal Abstinence Scoring Tool)
- Dedicated trained nurses provide medical care, including monitoring of Finnegan scores, administration of prescribed medications, and providing daily infant care in cooperation with the parents
- Quarterly NAS and opiate treatment updates into regularly scheduled nursing "Brown Bag" conferences

Total Initiative Cost

\$400,481

Total HPC Funding

\$249,778

Neonatal Abstinence Syndrome Interventions Awardee Highlight (Inpatient Services): *UMass Memorial Medical Center*



Target Population

Infants monitored for NAS

Primary Aim

Reduce length of inpatient stay for infants with NAS by 30%

Secondary Aims

Reduce readmission rates for infants with NAS within 30 days of discharge by 25%

Operational Approach

- Focus on standardization of scoring to identify and assess severity of NAS in infants, and standardization of protocols to minimize variability in pharmacological treatments
- Monthly review sessions of best practices with nurse educator to ensure retention of training
- Increase breastfeeding rate through a peer counselor lactation program for mothers
- Increase parental exposure to infant at the bedside
- Investment in enabling technology to assist nurses with Finnegan scoring decisions
- Integration of lessons learned through SAMHSA funded *Moms Do Care* program

Total Initiative Cost

\$354,794

Total HPC Funding

\$249,992

Neonatal Abstinence Syndrome Interventions Awardee Highlight (Inpatient Services): *Lawrence General Hospital*



Partners

- Floating Hospital for Children
- Greater Lawrence Family Health Center
- Andover Obstetrics-Gynecology
- Habit OPCO
- South Bay Mental Health
- Home Health Foundation
- New Beginnings Peer Recovery
- Massachusetts DCF

Primary Aim

Reduce the cost per NAS episode by 10%

Target Population

Infants monitored for NAS

Operational Approach

- Define an NAS episode of care, and develop a framework that identifies both the elements of an NAS episode, and the associated components of cost
- Deploy a multidisciplinary care coordination team to bridge gaps within the hospital, and between the hospital and outpatient providers
- Utilize both pharmacologic and non-pharmacologic interventions to reduce length of inpatient stay for infants with NAS
- Invest in clinician training on Finnegan scoring instruments, trauma-informed care, etc.
- Creation of an inpatient care toolkit
- Increase patient engagement by dedicating a social worker to support mothers

Total Initiative Cost

\$677,719

Total HPC Funding

\$250,000

Mother and Infant-Focused NAS Interventions Awardee Highlight (Full Spectrum): *Lowell General Hospital*



Partners

- WomanHealth (OB/GYN practice)
- Lowell Community Health Center
- OB/GYN Associates of Merrimack Valley
- Clean Slate (buprenorphine provider)
- Habit Opco (methadone provider)
- South Bay Lowell Mental Health Clinic (Behavioral Health services)
- South Bay Lowell Early Childhood Services (Early Intervention provider)
- Thom Anne Sullivan Center (Early Intervention provider)
- MA WIC Nutrition Program

Primary Aims

Inpatient Initiative Primary Aim: Reduce length of inpatient stay by 15%

Outpatient Initiative Primary Aim: Increase utilization of pharmacologic treatment by 20%

Operational Approach

- Identify women with OUD early in their pregnancies, and assist them in accessing pharmacotherapy
- Integrate care between acute care setting and outpatient providers of MAT and BH services
- Support families through pregnancy, delivery, and six months postpartum
- Improve quality of inpatient care for NAS infants

Target Population

- Infants monitored for NAS
- Pregnant women with OUD (enroll minimum of 50 women over 2 years)

Total Initiative Cost

\$1,451,364

Total HPC Funding

\$999,032

Mother and Infant-Focused NAS Interventions Awardee Highlight (Full Spectrum): *Beverly Hospital*



Partners

- DCF North Regional Office
- Northeast ARC EI
- Cape Ann EI
- North Shore YMCA
- Catholic Charities

Primary Aims

Inpatient Initiative Primary Aim: Reduce length of inpatient stay by 30%

Outpatient Initiative Primary Aim: Increase retention in treatment by 20%

Operational Approach

- Establish a support system for women during pregnancy and for 1 year post-partum.
- Provide behavioral health counseling along with pharmacological treatment, psychiatric services, and peer support for mothers
- Integrate training of psychiatry nursing staff to certify registered addictions nurses
- Train all staff in trauma-informed care

Target Population

- Infants monitored for NAS
- Pregnant women with OUD (enroll minimum of 70 women over 2 years)

Total Initiative Cost

\$1,226,962

Total HPC Funding

\$1,000,000

Contact Information

For more information about the Health Policy Commission:

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